Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A gas burner, comprising:

a metal burner membrane configured such that, during use, gas penetrates before being ignited and resulting in visible flames having a lower flame front where the gas initially ignites outside said membrane, wherein said membrane comprises a fabric comprising stainless steel fibers,

wherein said membrane of the gas burner comprises a base section having a smallest radius of curvature being R_{base}, a closing section, and a transition region connecting said base section to said closing section,

wherein said membrane is uninterrupted, and

wherein said transition region has a smallest radius of curvature $r_{transition}$ being larger than or equal to 0.02 x R_{base} and being smaller than or equal to 0.7 x R_{base}.

2. (Canceled)

3. (Previously Presented) A gas burner as in claim 1, wherein said stainless steel fibers are arranged essentially parallel into bundles.

4. (Original) A gas burner as in claim 3, wherein said bundles are knitted or braided or woven.

5. (Previously Presented) A gas burner as in claim 1, wherein said membrane further comprises a foraminated plate, a foraminated sheet, or a deep drawn or stamped wire mesh for supporting said fabric.

6. – 9. (Canceled)

10. (Previously Presented) A gas burner as in claim 5, wherein said base section has a shape of a conical surface of a frustum of a cone.

11. (Previously Presented) A gas burner as in claim 5, wherein said base section has a cylindrical shape.

12. (Currently Amended) A gas burner as in claim 10, wherein said transition region is part of a torus surface delimited by two planes perpendicular to an axis of symmetry of said torus surface.

13. (Previously Presented) A gas burner as in claim 5, wherein said base section has a polygonal cross section, the corners of said cross section being rounded.

14. (Previously Presented) A gas burner as in claim 5, wherein said base section has a rectangular cross section, the corners of said cross section being rounded.

15. (Previously Presented) A gas burner as in claim 5, wherein said base section is a truncated pyramid, said pyramid having rounded edges.

16. (Previously Presented) A gas burner as in claim 12, wherein said closing section is a small inverted sphere cap such that a depression forms at a center of said burner membrane.

17. (Currently Amended) A gas burner as in claim 11, wherein said transition region is part of a torus surface delimited by two planes perpendicular to an axis of symmetry of said torus surface.

18. (Previously Presented) A gas burner as in claim 11, wherein said transition region is in a form of a circular ridge.

19. (Canceled)

20. (Previously Presented) A gas burner as in claim 3, wherein said membrane further comprises a foraminated plate, a foraminated sheet, or a deep drawn or stamped wire mesh for supporting said fabric.

21. (Previously Presented) A gas burner as in claim 4, wherein said membrane further comprises a foraminated plate, a foraminated sheet, or a deep drawn or stamped wire mesh for supporting said fabric.

22. (Previously Presented) A gas burner as in claim 1, wherein the smallest radius of curvature R_{base} of the base section and the smallest radius of curvature $r_{transition}$ of the transition region follow the following relation: $0.02 \times R_{base} \leq r_{transition} \leq 0.35 \times R_{base}$.

23. (Canceled)

24. (Previously Presented) A gas burner as in claim 1, wherein the smallest radius of curvature R_{base} of the base section and the smallest radius of curvature $r_{transition}$ of the transition region follow the following relation: $0.09 \times R_{base} \leq r_{transition} \leq 0.7 \times R_{base}$.

25. (Previously Presented) A gas burner as in claim 1, wherein the smallest radius of curvature R_{base} of the base section and the smallest radius of curvature $r_{transition}$ of the transition region follow the following relation: $0.18 \times R_{base} \leq r_{transition} \leq 0.35 \times R_{base}$.

26. (Previously Presented) A gas burner as in claim 1, wherein the smallest radius of curvature R_{base} of the base section and the smallest radius of curvature $r_{transition}$ of the transition region are determined from a side of the membrane which faces the flames.

27. (New) A gas burner as in claim 1, wherein the base section and the transition region are configured such that gas speed through the transition region is lower compared to gas speed through the base section.

28. (New) A gas burner as in claim 1, wherein the membrane only has a single transition region connecting a single base section to a single closing section.

29. (New) A method of operating a gas burner, comprising:

penetrating gas through a metal burner membrane before igniting the gas, the membrane having a surface that is uninterrupted;

igniting the gas such that visible flames having a lower flame front where the gas initially ignites outside the membrane are produced; and

modulating gas speed through the membrane over the surface of the membrane by changing a smallest radius of curvature at different sections of the membrane.

30. (New) The method as in claim 29, wherein the membrane comprises a fabric comprising stainless steel fibers.

31. (New) The method as in claim 29, wherein the membrane of the gas burner comprises a base section having a smallest radius of curvature being R_{base}, a closing section, and a transition region connecting the base section to the closing section, and wherein the transition region has a smallest radius of curvature $r_{transition}$ being larger than or equal to 0.02 x R_{base} and being smaller than or equal to 0.7 x R_{base}.

32. (New) The method as in claim 29, wherein a first section of the membrane has a first smallest radius of curvature that results in a first gas speed through the membrane, wherein a second section of the membrane has a second smallest radius of curvature that results in a second gas speed through the membrane, and wherein the first gas speed is less than the second gas speed.

33. (New) The method as in claim 32, wherein a distance between the lower flame front and the first section is smaller than a distance between the lower flame front and the second section.